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APPLICATION NUMBER	FILED DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO.
08/924,405	08/22/97	LEWNO	J DON02-P-677
			EXAMINER

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15M1/0211

ART UNIT	PAPER NUMBER
1511	17

DATE MAILED: 02/11/98

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

#### OFFICE ACTION SUMMARY

- ☒ Responsive to communication(s) filed on 8/22/97
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

- ☒ Claim(s) 1-4, 6-37, 39-50, 52, 60-74, 76-92, 95, 99-110, and 112-153 is/are pending in the application.  
Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-4, 6-37, 39-50, 52, 60-74, 76-92, 95, 99-110, and 112-153 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

- ☐ See the attached Notice of Draftperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

- ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

—SEE OFFICE ACTION ON THE FOLLOWING PAGES—

Art Unit: 1511

15. The amendment of 8/22/97 has been entered. Claims 1-4, 6-24, 34-37, 39-49, 60-74, 76-92, 99-110, and 112-153 are pending.

16. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

17. Claims 1-4, 6-24, 34-37, 39-49, 60-74, 76-92, 99-110, and 112-153 are rejected under 35 U.S.C. § 103 as being unpatentable over US Pat. No. 5551197 Repp et al. in view of

US Pat. No. 4963636 Mulhaupt et al., SAE Technical paper series 910758 "Application of RIM Urethane to One Side of Glass for Automotive Windows" Csokasy et al., US Pat. No. 3282014 Bamford et al., US Pat. No. 5072984 Jackson, US Pat. No. 5294168 Kronbetter, US Pat. No. 4793099 Friese et al., US Pat. No. 5508111 Schmucker, US Pat. No. 5338767 Sartelet et al. , US Pat. No. 4364214 Morgan et al.,

Art Unit: 1511

US Pat. No. 4743672 Goel, Betamate 73100/73003 Technical Bulletin, the Betamate Structural Adhesives data table, and US Pat. No. 4995666 Schurmann.

Repp et al. discloses a vehicle window assembly in which the window mounting members are adhered to only the inner surfaces of the glass panel. This arrangement falls within the structural arrangement of the instant claims. See the abstract; figures 1-15; column 1, lines 5-10; column 2, lines 6-68; column 3, lines 1-57; column 4, lines 40-50; and column 5, lines 1-10. Repp et al. discloses adhering the glass to the hinge using a layer of hotmelt urethane adhesive as a temporary fixturing adhesive and a curable polyurethane adhesive that gives a permanent bond (column 7, lines 12-55). Repp et al. prefers urethane adhesives (column 8, lines 47-50).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the instantly claimed rapid set, rapid cure, two component urethane adhesives because the broad recitation of urethane adhesives by Repp et al. encompasses such adhesives, the preferred one component adhesives of Repp et al. (column 8, lines 39-47) do not teach away from the two component adhesives, and Sartelet et al., Csokasy et al., Mulhaupt et al., and Goel et al. disclose the use of two component adhesives for bonding metal to glass.

Sartelet et al. shows two component polyurethanes to be useful for bonding windows to window profiles at column 1, lines 15-31 and that such adhesives may be cured in 1

Art Unit: 1511

minute to about 5 hours (column 1, line 65 to column 2, line 11). This falls within the scope of the instantly claimed set time period and rapid cure. The examiner notes that his personal experience with adhering substrates to other substrates generically has shown him that adhesives are often sold based upon their set and cure times, i.e. the label defines many two part adhesives in terms of how long they take to cure and routine consideration of the thing to be bonded gives the ordinary skilled artisan the information needed to determine how fast the set should be. It is really a matter of "design choice". If you do not wish to set up elaborate time consuming, expensive jigs, braces, or other holding means, you use a fast set adhesive. If the jigs are going to be there anyway, i.e. when you build an airplane, slower set adhesives are usable. The ordinary skilled artisan can see that time is money and in an assembly line application, such as building cars, quicker is better.

The applicant's arguments with regard to column 2, lines 1-14 of Sartelet et al. are noted. Proper grammatical interpretation of the sentence of column 2, lines 7-11 means that the times of column 2, lines 10-11 refer back to "potlife". This is supported by column 5, lines 19-22 and 57-59. Potlife is indicative of "cure". The applicant shows no evidence that the instantly claimed set and cure are not possessed by the composition of Sartelet et al..

Art Unit: 1511

The compositions of Sartelet et al. contain amines, which falls within the scope of the instant claims 41 and 88.

Csokasy et al. teaches the bonding strength of two component polyurethanes to glass. See the entire document. Note that RIM polyurethanes are two component polyurethanes. Figure two shows the use of glass frit to aid adhesion through the clear increase of surface area and corresponding increase in the number of adhesive bonds which give greater overall adhesion.

Mulhaupt et al. discloses the use of two component polyurethanes as adhesives for bonding metal, glass, and plastics (column 3, lines 24-44; column 4, lines 55-68; column 5, lines 1-16 and 65-68; and column 6, lines 1-16. Column 6, lines 55-56 show that the intention of the patentee is to bond glass to metal.

Goel discloses the use of two component polyurethanes for bonding glass, metal, and plastic and the reasons which polyurethane adhesives are desirable in such bonding uses at column 1, lines 5-68; column 2, lines 1-68; column 3, lines 1-68; column 4, lines 1-68; and column 5; lines 1-21.

Bravet et al. discloses the use of two component polyurethanes to adhere safety glass to the vehicle at column 1, lines 41-52 and throughout the reference.

Many of the instant claims are silent with respect to the composition of the urethane adhesive. No unexpected results are demonstrated stemming from the use of the broadly

Art Unit: 1511

claimed urethane adhesives of these claims, in a manner which is commensurate in scope with the cited prior art and the instant claims.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the two component polyurethane adhesive of Schmucker as the two component polyurethane adhesive referred to in the above paragraph because the skilled artisan would have expected such a polyurethane to adhere to primed glass and metal, as taught above and at column 4, lines 37-51 in addition to lending the improved properties of Schmucker to the adhered assembly and the method of making the assembly. The composition of Schmucker falls within the scope of the composition of the instant claims 1-4, 6-24, 33-37, 39-57, 60-74, 76-92, 99-110, and 112-153. See the entire document.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the amines of the instant claim 141 in the above discussed two component polyurethane adhesives because they are expected to give the sag resistance formed via the hydrogen bonding of the urea groups formed upon their rapid reaction with NCO as described by Goel and Schmucker and the applicant states that these are conventionally used in two part polyurethane adhesives such as the betamates described above.

Art Unit: 1511

Column 5, lines 11-68 and column 6, lines 1-14, of Repp et al., discloses the use of ceramic frit, which falls within the scope of the instant claims 14, 37, 70, 80, 89, 99, 122, and 148.

The patentee is silent as to the tensile force that the bonded assembly could withstand. The burden is on the applicant to show that the glass to metal bond of Repp et al. using the two component polyurethanes of the references disclosing glass to metal bonds using two component polyurethane adhesives would not inherently possess the tensile force of the instant claim 88. Repp et al. understands that such window assemblies are subject to extreme stresses and you cannot have car windows falling out when you hit a speedbump. See Repp et al., column 2, lines 6-23.

The windows disclosed by Repp et al. fall within the scope of the claimed window structures of the instant claims (see the figures; column 2, lines 6-23; column 4, lines 40-50; column 5, lines 1-11; and column 11, lines 4-20).

Schurmann discloses the window mechanical structure, including the use of adhesive in general (column 2, lines 57-61) for the use of adhesive and the entire document), of the instant claims 1-46 and 71-123, but not the particulars of the adhesion composition and attachment points such as glass frit and primer.

Friese et al. discloses the mechanical structure of the sliding window of the instant claims 126-130 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

Art Unit: 1511

Kronbetter discloses the mechanical structure of the sliding window of the instant claims 126-130 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

Jackson discloses the mechanical structure of the window of the instant claims 124-125 except that it does not disclose the use of the instantly claimed adhesive. See the entire document.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the adhesives of the instant claims to adhere automotive window glass to any of the instantly claimed assemblies, of claims 124-130 and 149-153, because it is generally known to adhere glass to metal or plastic using the instantly claimed two component polyurethane compositions, as shown by Repp et al., Sartelet et al., Csokasy et al., Mulhaupt et al., and Goel and these window structures are expected to be subject to less stress than the hinged windows of Repp et al..

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to apply the adhesive bead discussed above in the thicknesses of the instant claims 11-13, 15-17, 61-63, 82-87, 101-103, 106-108, 113-115, and 118-120 because such thicknesses are disclosed by Repp et al. at column 7, lines 34-38.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the glass primers and the fritted glass of the instant claims to increase the bonding of the polyurethane to glass because such expedients are known to the ordinary



Art Unit: 1511

skilled artisan as taught by Repp et al. (column 8, lines 60-68 and column 9, lines 1-23), Morgan et al. in the abstract, Csokasy et al. at Figure 2, and Bamford et al. at column 2, lines 22-60 and such fritted material will provide an area of larger surface area to which the adhesive can bond more strongly due to the corresponding increased number of adhesive bonds and mechanical friction.

The method of adhesion of the instant claims is encompassed by that of the above references to bonding glass to a structural member with two component polyurethane.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to use the automated application methods of the instant claims and inductive heating according to the instant claim 69 because inductive heating of two component polyurethanes is well known for increasing cure rates of the urethanes as taught by the Betamate Structural Adhesives data table which states "All Two Component Urethanes Can Be Induction Cured."; Betamate 73100/73003 Technical Bulletin describes the automated application of such polyurethane adhesives; the instant specification shows the claimed apparatus limitations to be well known; and Repp et al. discloses the use of robotics to attach the disclosed components at column 10, lines 35-38.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to attach members, such as the rear view mirror, to automobile glass using the method of Repp et al. because these items are typically adhered to the glass and, if the method of Repp et al. can hold a window which is subject to opening and closing forces,

Art Unit: 1511

it is expected to hold objects subject to much lesser forces adequately. Conventional methods of holding the rear view mirror often fail, as I have personally had to reattach about a dozen rear view mirrors for people. The acrylate adhesives sold for this purpose typically don't last past two years. The method of adhesion of Repp et al. would have been expected to be a great improvement in adhering rear view mirrors and other objects which are subject to less stress than the windows of Repp et al..

18. Claim 78 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

A. Claim 78 adds members to the Markusch group of "attachment member" which does not further limit claim 71.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Niland on Monday to Friday from 9:30 to 6:00 whose telephone number is (703) 308-3510. If the examiner cannot be reached, and the inquiry is urgent, call Vasu Jagannathan at (703) 306-2777. Direct any faxes to members of Art Unit 1511 to (703) 305-3599.

pn

February 6, 1998

Serial Number: 08/924405

-11-

Art Unit: 1511

A handwritten signature in black ink, appearing to read "Patrick Niland", written in a cursive style.

Patrick Niland  
Primary Examiner  
Art Unit 1511